REMARKS

Claims 4, 5, 6, 7, 8, 9, 13, 14, 15, 16, 17, 18 and 22-26 are pending in the application. Of the claims, Claims 4, 5, 13, 14, and 22-24 are independent claims. Applicant notes that the Claims 5, 6, 15 and 16 have been omitted from the Office Action however, these claims are pending in the application.

Claims 4, 5 and 24 have been amended. Support for these claim amendments can be found on at least at page 6, lines 4-12, page 9, lines 3-20 and Fig. 3B of the Specification as originally filed. No new matter has been introduced by way of these amendments.

Regarding 35 U.S.C. § 102(e) Rejection

Claims 4-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Hariguchi et al. (U.S. Patent No. 6,956,858), hereafter "Hariguchi".

Before discussing the cited references, a review of the Applicant's disclosure may be helpful. The present invention is directed towards updating a multi-level lookup table while minimizing the number of writes necessary to update roots in the lookup table. A default root memory stores a default root for a subtree, and that default root may be shared by nodes in the subtree. The default root may be updated by performing a single write to the default root memory to include the write index of another subtree. (See Specification, page 6, lines 4-12.)

To better illustrate how the present invention updates a multi-level lookup table using a single write, the Applicant refers to the example embodiment of Fig. 3B. Specifically, Fig. 3B shows a binary tree representation of routes stored in a multi-level lookup table, after adding a route to a subtree D. A route, r3, is shown that has been added to the subtree D in level_2 300. The addition of route r3 results in modification of the default route index for subtree E and subtree F.

The addition of route r3 to subtree D requires updating the route index for nodes 312^1 - 312^4 and 312^9 - 312^{16} in subtree E. The update of the default route index for subtree E is performed by a single write, to write the route index for r3 in default route memory 306. No modification is required to the default route memory 308 for subtree F because the default route memory 308 is set to inherit. In this way, the default route index for subtree F is stored in the

default route memory 306 for subtree E, that is, the parent subtree. Therefore, only a single write operation is required to update the default route for each node in subtree E and subtree F by writing the route index for route r3 in the default route memory 306 for subtree E. (See Specification, page 9, lines 3-15.)

In contrast, the cited reference, Hariguchi, is directed to a network routing table and packet routing method. In particular, Hariguchi updates a routing field of a beginning element with a new route pointer if a new prefix length is greater than a prefix length associated with a current route pointer or if the routing field of the beginning element is empty, i.e., NULL. Specifically, Fig. 12B of Hariguchi shows a process of updating the routing field in steps 210-216. The process requires that all of the default route pointers be traversed. In traversing these default route pointers, an update, i.e., a write, is made each time "a new prefix length is greater than the prefix length of the current route pointer or if the current route pointer is NULL." (See col. 12, lines 20-46.) During this update, the routing field value is updated with a destination address and a corresponding prefix length, not a route index value of a subtree. (See col. 11, lines 54-64.)

Therefore, this route pointer, described in Hariguchi, is not a default route memory of a root of a subtree that is updated with a route index value of a subtree with a single write. Rather, the route pointer of Hariguchi is pointer updated with destination addresses and prefix lengths. Further still, the Hariguchi process is designed to traverse all of the route pointers and to make updates, if necessary, to each routing field. However, this process is designed to perform as many writes as necessary in order to perform an update, rather than modifying a route pointer using a single write. As Hariguchi does not disclose, "*. . . modifying the default route of the root of the subtree, in a single write, by updating the default route memory of the root of the subtree with a route index value of the subtree. . .*" as claimed in amended Claim 4, Applicant submits that Claim 4 is patentably distinguished over Hariguchi and is now in allowable form.

Independent Claim 5, as now amended, has a similar limitation, and therefore, should be allowed for at least the same reason over Hariguchi under 35 U.S.C. 102(e).

Claims 8-9 are dependent on independent Claim 4 and Claims 6-7 are dependent on independent Claim 5. Accordingly, these claims should be found in allowable condition for at least the same reasons as stated above.

Accordingly, the rejections under 35 U.S.C. 102(e) as being anticipated by Hariguchi are believed to be overcome.

Regarding 35 U.S.C. § 102(b) Rejection

Claims 13, 14, 22 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Ahuja et al. (U.S. Patent No. 5,946,679), hereafter "Ahuja".

The cited reference, Ahuja, is directed to a system and method for locating a route in a route table using hashing and compressed radix tree searching. Fig. 9 shows a subsystem for performing a compressed radix tree search. Briefly outlining the operation of compressed radix tree subsystem, a processor receives message destination addresses and attempts to locate the address of an output route entry by progressively searching the tree of nodes. The searching of the tree begins at a root node and the search is based on the contents of a register set. The register set comprises a plurality of registers where one of these registers is used to maintain a "default route pointer which points to the default output interface to be taken by a packet if the packet address is not located." By design, Ahuja uses this default route pointer to reference to a default output interface rather than a default route associated with the root node of a subtree. (See col. 13, lines 7-34.) As, Ahuja does not disclose, ". . . *a default route memory which stores an inherent indicator to indicate that a default route associated with the root of the subtree is inherited from another subtree* . . . ," as claimed by the Applicant in Claim 13, Applicant submits that Claim 13 is patentably distinguished over Ahuja and is in allowable form.

Independent Claims 14, 22 and 23 have a similar limitations, and therefore, should be allowed for the similar reason over Ahuja under 35 U.S.C. 102(e).

Accordingly, the rejections of claims under 35 U.S.C. 102(e) as being anticipated by Ahuja are believed to be overcome.

Regarding 35 U.S.C. § 103 Rejections

Claims 15-18 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahuja in view of Hariguchi.

Base Claim 14, from which Claims 15 and 16 depend, claims the feature of "*a default route memory which stores an inherent indicator to indicate that a default route associated with*

the root of the subtree is inherited from another subtree . . . ." As the combination of Ahuja and Hariguchi does not disclose or suggest this feature, Applicant believes that Claim 14 is patentably distinguished over the combination of Ahuja and Hariguchi. As Claims 15 and 16 depend from Claim 14, Applicant submits that they are also patentably distinguished over the combination for at least the same reason, and are therefore in allowable form.

Independent Claims 13, 22 and 24 have similar limitations as Claim 14, and therefore, should be allowed for at least the same reasons as stated above.

Claims 17-18 are dependent on independent Claim 13 and Claims 25-26 are dependent on independent Claim 22. Accordingly, these claims should be found in allowable condition for at least the same reasons as stated above.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By _____

James M. Smith
Registration No. 28,043
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Concord, MA 01742-9133
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